

AR13



PEACE RIVER
Mining & Smelting Ltd.
Annual Report
1969

PEACE RIVER

Mining & Smelting Ltd.

Including Wholly-owned Subsidiary Companies

Matthew Brady Holdings Limited, Windsor, Ontario

Great Lakes Forgings Limited (Forging Division), Windsor, Ontario

Great Lakes Forgings Limited (Metal Powder Division), Amherstburg, Ontario

G.L. Processing Limited, Windsor, Ontario

St. Clair Metal Processing Limited, Windsor, Ontario

directors F. J. Bartholomew, P.Eng.
J. C. Dale, P.Eng.
W. Clarke Gibson
A. J. Hamilton, F.C.A.
G. R. Heffernan, P.Eng.
R. C. Heim
M. M. Koerner
P. L. P. Macdonnell, Q.C.
H. R. Milner, Q.C., LL.D.
Gordon P. Osler
F. G. Winspear, F.C.A., LL.D.

officers F. G. Winspear, *Chairman of the Board*
G. R. Heffernan, *President*
F. J. Bartholomew, *Vice-President*
J. C. Dale, *Vice-President*
C. P. Gravenor, *Vice-President*
A. J. Hamilton, *Treasurer*
P. L. P. Macdonnell, *Secretary*

registered office 10040 - 104 Street, Edmonton 14, Alberta

main plant and administrative office Amherstburg, Ontario

auditors McDonald, Currie & Co.
Windsor, Ontario

transfer agent and registrar CANADA PERMANENT TRUST COMPANY
Edmonton, Toronto, Montreal, Vancouver and Halifax

**report of the
board of directors
to the shareholders
of Peace River
Mining & Smelting Ltd.**

On behalf of the Board of Directors, I am pleased to submit the seventh annual report of your Company for the period from September 1, 1968 to August 31, 1969.

construction program

The construction of the 50,000 ton per year iron powder plant at Amherstburg is proceeding on schedule toward the target of early 1970. Approximately fifty percent of the plant comprising the ferrous chloride section and including the dissolver and crystallizer have been turned over to the production crews for commissioning. It is expected that the remainder of the plant will be ready for commissioning toward the end of November. Barring unforeseen startup difficulties it appears that the production target date set almost two years ago will be met despite the wettest construction season on record in the area, a lockout by the contractors at the peak of our construction period, and a strike by pipe-fitters which followed the lockout.

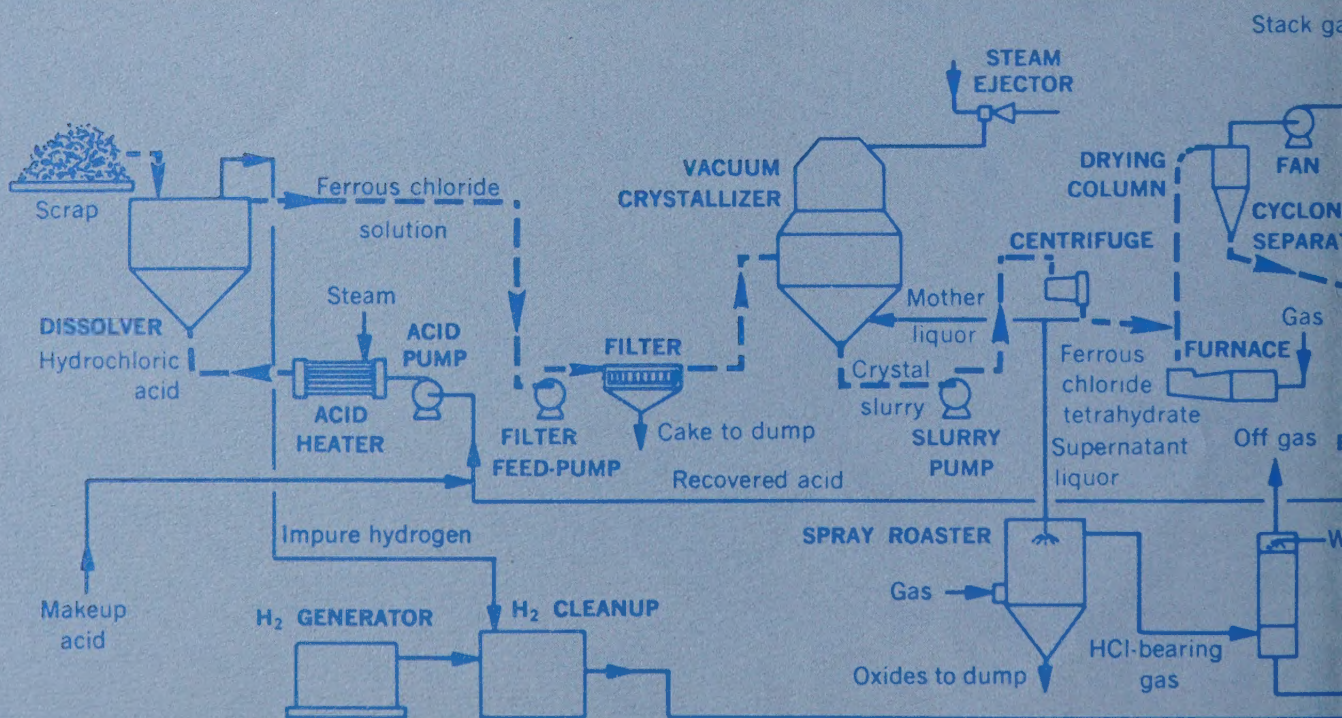
markets

Since the decision was made to proceed with the Amherstburg plant an additional 170,000 tons of new iron powder capacity has been announced by other producers attracted by the rapidly expanding market. This will create an oversupply situation which will make our buildup to capacity difficult during 1970. We anticipate however that this situation will ease in 1971 as the market grows and the superior quality of our powder becomes recognized.

research and development

In recognition of the fact that sales would be difficult in 1970 the Company expanded its research and development efforts beyond those originally contemplated. The main areas of concentration of this research were toward better and cheaper alloy powders than those now available and toward a system of hot forging of iron powder to make full density parts competitive in price and quality with conventional hot forgings.

Your Company can report success in both of these areas. A system of copper alloying has been developed in the pilot plant which, if the pilot results can be duplicated in the commercial plant, will provide a



series of iron-copper alloys more economical than those now available. In addition to this a family of manganese alloys is being developed which show great promise, particularly for hot forging. The work on hot forging has resulted in a prototype production line which is now in operation on an experimental basis producing hot forged full density parts from iron powder. This line will go into full production as iron powder becomes available from the new plant. While the facility is intended as a commercial unit and will consume a significant quantity of alloy iron powder its main purpose is as a demonstration unit for potential users of Peace River products who will be licensed to use the process. Your management believes that this hot forging system is unique and will make a major contribution to a rapid expansion of sales in 1971.

financial

Due to the unusually bad construction weather and an incredibly rapid rise in on-site construction costs during 1968 coupled with low efficiency due to lockouts and strikes the project will cost more than previously anticipated. (See Note 3 to the financial statements.) In order to cover this increase in construction cost, anticipated startup expenditures in 1970, and the cost of the Research and Development program for alloys and forgings it will be necessary to do additional financing. Plans for this financing will be announced to the shareholders in due course.

subsidiaries

The operations of Matthew Brady Holdings Limited and the other subsidiaries continue to improve and showed a net profit of \$90,000 and a cash flow of \$158,000 for the year. The subsidiaries have a full order book and with new equipment which will be installed by the end of the calendar year should show improved sales and earnings in the fiscal year ending August 31, 1970.

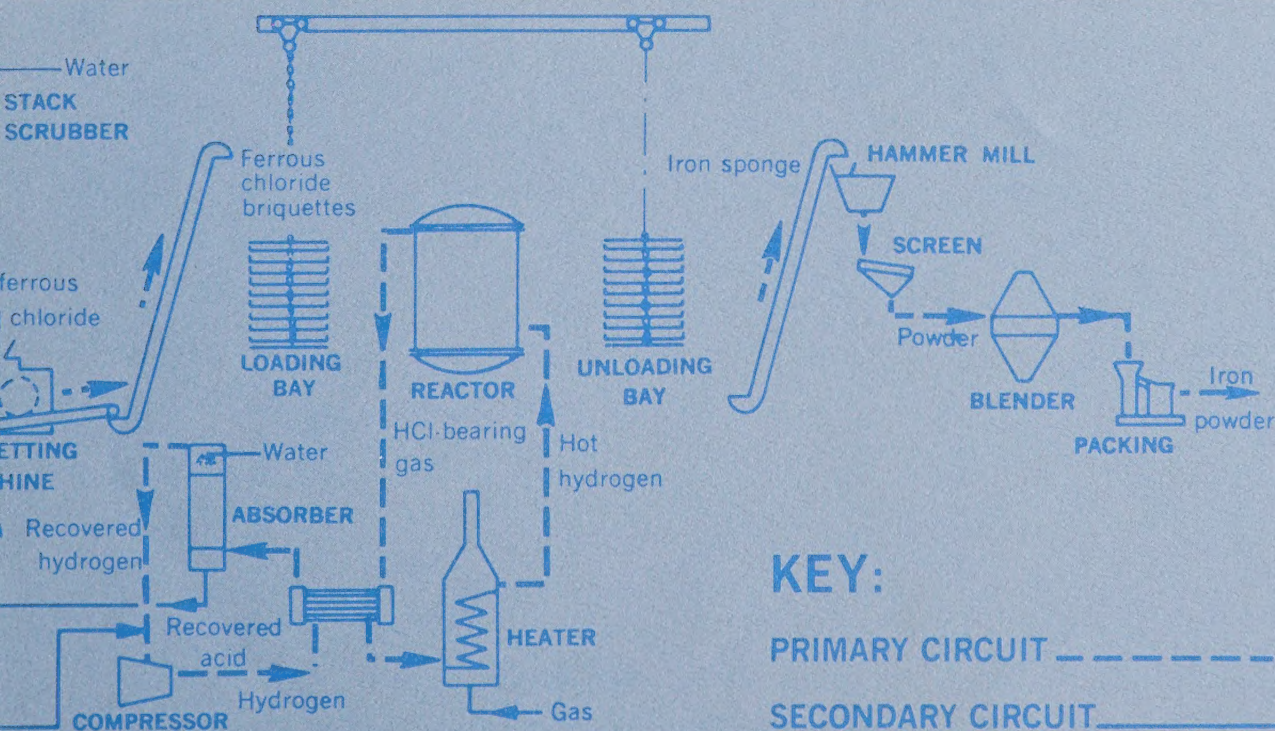
personnel

The Directors again wish to thank all those who have given long hours of extra effort to bring about the completion of the plant on time.

November 3, 1969.

G. R. Heffernan.

G. R. Heffernan
President



PEACE RIVER

Mining & Smelting Ltd.

and subsidiary companies

consolidated balance sheet as at August 31, 1969

(with pro forma consolidated balance sheet as at August 31, 1969, to give effect to receipt, subsequent to the year end, of advance against 7¼ % secured debenture referred to in note 3)

ASSETS	1969	Pro-forma	1968
	\$	1969	(note 10)
CURRENT ASSETS		\$	\$
Cash	47,414	47,414	129,621
Accounts receivable	291,713	291,713	206,462
Inventories (note 2)	223,418	223,418	142,424
Prepaid expenses	157,478	157,478	122,482
Funds allocated to Iron Powder Project (note 3)	322,712	1,800,434	7,992,388
	<u>1,042,735</u>	<u>2,520,457</u>	<u>8,593,377</u>
FIXED ASSETS			
Mining properties under lease — at cost (note 4)	316,405	316,405	316,405
Buildings and equipment — at cost less accumulated depreciation (1969 — \$569,737; 1968 — \$507,183)	579,460	579,460	551,965
Construction in progress (note 3)	11,036,331	11,036,331	770,959
	<u>11,932,196</u>	<u>11,932,196</u>	<u>1,639,329</u>
OTHER ASSETS			
Deferred exploration, development, research and administrative expenses (note 4)	4,358,357	4,358,357	3,444,803
Financing expense	543,378	543,378	543,378
Excess of cost of investment in shares of subsidiary company over book value of the net assets	304,592	304,592	304,592
	<u>5,206,327</u>	<u>5,206,327</u>	<u>4,292,773</u>
	<u>18,181,258</u>	<u>19,658,980</u>	<u>14,525,479</u>

SIGNED ON BEHALF OF THE BOARD

G. R. HEFFERNAN, Director

A. J. HAMILTON, Director

9-8-83

LIABILITIES

CURRENT LIABILITIES

Accounts payable and accrued liabilities

LONG-TERM DEBT

Bank advances

7½ % convertible debentures series "A"
due 1983 (note 5)

7¼ % secured debenture (note 3)

	1969 \$	Pro-forma 1969 \$	1968 \$
Accounts payable and accrued liabilities	1,967,250	1,967,250	501,270
Bank advances	2,022,278	—	—
7½ % convertible debentures series "A" due 1983 (note 5)	6,500,000	6,500,000	6,500,000
7¼ % secured debenture (note 3)	—	3,500,000	—
	8,522,278	10,000,000	6,500,000
	10,489,528	11,967,250	7,001,270

SHAREHOLDERS' EQUITY

CAPITAL STOCK (note 6)

Authorized —

5,000,000 common shares without nominal
or par value

Issued and fully paid—

2,514,243 shares (1968 — 2,513,743 shares)

CONTRIBUTED SURPLUS (note 7)

RETAINED EARNINGS (DEFICIT)

Authorized —			
5,000,000 common shares without nominal or par value			
Issued and fully paid—			
2,514,243 shares (1968 — 2,513,743 shares)	6,140,141	6,140,141	6,138,391
CONTRIBUTED SURPLUS (note 7)	1,470,376	1,470,376	1,394,695
RETAINED EARNINGS (DEFICIT)	81,213	81,213	(8,877)
	7,691,730	7,691,730	7,524,209
	18,181,258	19,658,980	14,525,479

PEACE RIVER

Mining & Smelting Ltd. and subsidiary companies

consolidated statement of earnings and retained earnings for the year ended August 31, 1969

	1969 \$	1968 (note 1) \$
SALES	2,370,089	1,466,216
COST OF SALES, SELLING AND ADMINISTRATIVE EXPENSES	2,285,403	1,479,796
	84,686	(13,580)
OTHER INCOME	6,504	5,269
	91,190	(8,311)
PROVISION FOR INCOME TAXES (note 9)		
Current	—	566
Deferred	1,100	—
	1,100	566
NET EARNINGS (LOSS) FOR THE YEAR	90,090	(8,877)
RETAINED EARNINGS (DEFICIT) — BEGINNING OF YEAR	(8,877)	—
RETAINED EARNINGS (DEFICIT) — END OF YEAR	81,213	(8,877)

consolidated statement of contributed surplus for the year ended August 31, 1969

	1969 \$	1968 \$
BALANCE — BEGINNING OF YEAR	1,394,695	917,518
Grants received from the Canadian Government during the year	75,681	477,177
BALANCE — END OF YEAR	1,470,376	1,394,695

consolidated statement of deferred exploration, development, research and administrative expenses for the year ended August 31, 1969

	1969 \$	1968 \$
BALANCE — BEGINNING OF YEAR	3,444,803	2,701,378
EXPLORATION AND DEVELOPMENT	10,014	10,014
RESEARCH	498,190	598,754
MARKET DEVELOPMENT	97,798	12,327
ADMINISTRATIVE		
General corporate administration	154,954	98,335
Patents	7,508	11,212
Interest expense (net)	145,090	12,783
BALANCE — END OF YEAR	4,358,357	3,444,803

consolidated statement of source and use of funds (note 10) for the year ended August 31, 1969

(with pro forma consolidated statement of source and use of funds for the year ended August 31, 1969, to give effect to receipt, subsequent to the year end, of advance against 7¼ % secured debenture referred to in note 3)

	1969 \$	Pro-forma 1969 \$	1968 \$
SOURCE OF FUNDS			
Net earnings (loss) for the year	90,090	90,090	(8,877)
Add: Charge not requiring cash outlay — Depreciation	68,151	68,151	51,030
	<u>158,241</u>	<u>158,241</u>	<u>42,153</u>
Issue of capital stock	1,750	1,750	4,188,310
Additional long-term debt			
Bank advances	2,022,278	—	—
7¼ % secured debenture	—	3,500,000	—
7½ % convertible debentures series "A"	—	—	6,500,000
Contributed surplus	75,681	75,681	477,177
	<u>2,257,950</u>	<u>3,735,672</u>	<u>11,207,640</u>
USE OF FUNDS			
Exploration, development, research and administrative expenses	913,554	913,554	743,425
Financing expenses	—	—	543,378
Payment of mortgage loans	—	—	221,250
Purchase of subsidiaries	—	—	628,247
Purchase of fixed assets	95,646	95,646	49,556
Construction in progress	10,265,372	10,265,372	770,959
	<u>11,274,572</u>	<u>11,274,572</u>	<u>2,956,815</u>
INCREASE (DECREASE) IN WORKING CAPITAL	(9,016,622)	(7,538,900)	8,250,825
WORKING CAPITAL (DEFICIENCY) — BEGINNING OF YEAR	8,092,107	8,092,107	(153,724)
WORKING CAPITAL (DEFICIENCY) OF SUB- SIDIARIES AT DATE OF ACQUISITION	—	—	(4,994)
WORKING CAPITAL (DEFICIENCY) — END OF YEAR	<u>(924,515)</u>	<u>553,207</u>	<u>8,092,107</u>

PEACE RIVER

Mining & Smelting Ltd. and subsidiary companies

notes to consolidated financial statements for the year ended August 31, 1969

1. PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of all subsidiary companies which are as follows:

Matthew Brady Holdings Limited
Great Lakes Forgings Limited
G.L. Processing Limited
St. Clair Metal Processing Limited

The subsidiaries were acquired on November 1, 1967 and only their operations since that date have been included in the 1968 figures reflected in these consolidated financial statements.

2. INVENTORIES

The inventories are comprised of the following:

	1969	1968
	\$	\$
Raw materials — at the lower of cost or replacement cost	140,073	97,947
Work in process and finished goods — at the lower of cost or net realizable value.	83,345	44,477
	<u>223,418</u>	<u>142,424</u>

3. IRON POWDER PROJECT

Great Lakes Forgings Limited, a subsidiary, is constructing an iron powder plant. A \$6,000,000 7¼% secured debenture which has been acquired by a government lending institution will provide funds which may be drawn as the project develops. The project must be completed before June 30, 1970 and the company must be able to satisfy the government that the company will have sufficient funds to complete the project. If any material adverse change in risk occurs which the company is unable or unwilling to correct the government may refuse to advance the funds. The repayment provisions consist of ten consecutive quarterly instalments of \$75,000 each commencing on December 15, 1970 and thirty consecutive quarterly instalments of \$175,000 each commencing on June 15, 1973. The debenture is secured by mortgages on all real property and fixed and floating charges on all other assets, property and undertakings of

Great Lakes Forgings Limited and the other subsidiary companies listed in note 1.

The estimated cost to complete the project and bring the facility into commercial operation, including the working capital requirements and various development expenses, is as follows; according to the company's calculations:

	\$
Construction in progress	2,797,000
Net interest during construction, research, pre-production and market development expense	987,000
Working capital	<u>1,800,000</u>
	<u>5,584,000</u>

After payment of existing accounts payable and bank advances related to the project, an amount of \$2,853,000 is available towards settlement of the above estimated cost of completion from the proceeds of this secured debenture. This leaves a balance of \$2,731,000, including provision for \$1,800,000 working capital, to be provided by further financing.

Subsequent to the year end the company received \$3,500,000 as initial drawdown against the secured debenture. In the pro-forma figures these funds were utilized to repay all bank advances existing at date of receipt and the balance was allocated to funds available for the Iron Powder Project.

4. MINING PROPERTIES AND DEFERRED CHARGES

The amounts shown for mining properties and deferred exploration, development, research and administrative expenses represent actual costs to date and are not intended to reflect present or future values.

5. 7½% CONVERTIBLE DEBENTURES

These debentures are convertible at the option of the holders into common shares at the rate of 150 shares for each \$1,000 principal amount of debentures on or before February 10, 1983.

The provisions of the Trust Indenture provide for the creation of a purchase fund for the retirement of the debentures by requiring payment of the sum of \$150,000 to the Trustee on February 15 in each of the years 1971 to 1982 inclusive.

6. CAPITAL STOCK

Of the authorized capital, 975,000 shares have been reserved for possible conversion of 7½% debentures and 107,750 shares are reserved under various employee stock option and share purchase plans. These options may be exercised at various dates terminating October 1, 1974 for consideration of \$3.50 to \$5.50 per share.

During the year 500 shares were issued for a cash consideration of \$1,750.

7. CONTRIBUTED SURPLUS

Contributed surplus represents grants from Canadian Government Boards toward approved research programs. Grants of \$75,681 were claimed in respect to the current year. Of the total authorized amount of these grants a further \$146,700 may be claimed as research expenditures are made by the company.

8. STATUTORY INFORMATION

The expenditures for the year ended August 31, 1969 include the following:

	1969	1968
	\$	\$
Interest on long-term debt	487,500	269,586
Depreciation	68,151	51,030
Remuneration of directors and senior personnel	111,711	99,727
No directors' fees have been paid in 1968 and 1969.		

9. PROVISION FOR INCOME TAXES

A subsidiary company, pursuant to application duly made, procured certification under Section 71A of the Income Tax Act from the Minister of Industry as a manufacturing business in a designated area. If the certification granted for the fiscal years ended July 31, 1967 and 1968 is extended in like fashion to the fiscal year ended July 31, 1969 through continued compliance with Section 71A during that time, the income earned by the subsidiary during the three year period then ended will not be classed as taxable income under Canadian tax laws.

Income taxes otherwise payable on net income of that subsidiary contained in the consolidated statement of earnings and retained earnings, would have been approximately \$64,000 and \$17,000 for 1969 and 1968 respectively and the consolidated profit reduced or consolidated loss increased by a corresponding amount subject to adjustment for unclaimed depreciation referred to hereunder.

This subsidiary has charged against income depreciation in the amount of \$21,029 for the year ended August 31, 1969 and \$51,827 to date which sums have not been deducted in determining tax exempt income and will be available to reduce taxable income of that subsidiary in future years.

10. COMPARATIVE BALANCES

Current assets have been restated as at August 31, 1968 for comparative purposes, in an allocation to Iron Powder Project of those funds attributable thereto.

auditors' report to the shareholders

We have examined the consolidated balance sheet of Peace River Mining & Smelting Ltd. and subsidiary companies as at August 31, 1969 and the consolidated statements of earnings and retained earnings, contributed surplus, deferred exploration, development, research and administrative expenses and source and use of funds for the year then ended. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion these consolidated financial statements present fairly the financial position of the companies as at August 31, 1969 and the results of their operations and the source and use of their funds for the year then ended, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

October 31, 1969.

McDONALD, CURRIE & CO.,
Chartered Accountants.
Windsor, Ontario

Peace River's new process blazes trail in use of new materials

The possibility of using the ferrous chloride method to produce iron powder has been suggested by many inventors since 1880 when one of the first patents was granted. The commercial realisation of these inventions was not immediately forthcoming, primarily because of the lack of materials which could economically resist the corrosive liquids and vapours that would be encountered.

A whole new spectrum of materials for the economical handling of corrosive agents has been developed by the application of modern materials sciences. These new materials were used and tested extensively by Peace River engineers in the design, construction and operation of a pilot plant in Edmonton.

The experience gained with these materials has



allowed the company to reduce to practical limits the capital and maintenance costs associated with handling the corrosive liquids and vapours encountered in the commercial plant at Amherstburg.

The principal material that has been extensively used is glass fibre reinforced plastic, commonly referred to as FRP. The hot acid solutions produced in the first stages of the Peace River Process are handled in vessels and pipes made of FRP.

The vessels in the plant tank farm were fabricated from FRP. These tanks include two twenty foot diameter acid storage tanks which were fabricated on the construction site because they were too large to transport over public highways (see photo I).

Control of air pollution which could result from the escape of corrosive gases produced during the flash drying of ferrous chloride crystals is effected in an absorption/scrubbing tower. This tower, constructed of FRP, is more than seven feet in diameter and thirty feet in height (see photo II).

Some sixteen thousand feet of FRP pipe ranging in diameters from one to forty-four inches are used in the Amherstburg plant to convey acids of various strengths, corrosive gases and corrosive vapours (see photo III). While much of this piping is



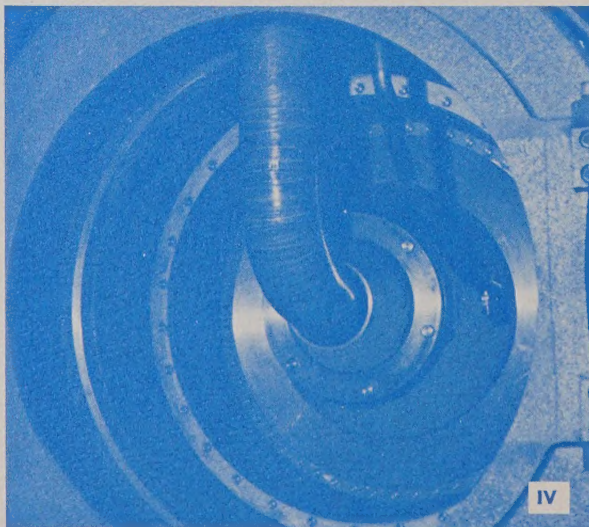


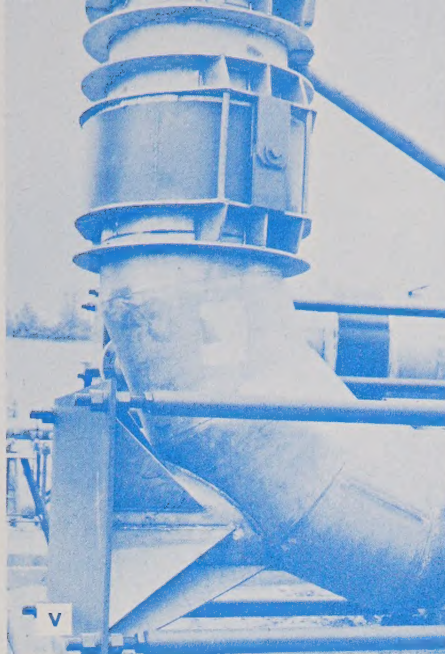
in evidence throughout the plant, the casual visitor is not aware that many large FRP pipes are also buried underground.

An unusual structural application of polypropylene plastic is in the conveyor buckets used to transport the ferrous chloride briquettes to the reactor charging area. This material reduces both the incidence of material breakage and corrosion of the conveyor.

While plastics are very much in evidence there are also many uses of metals that were not in common industrial use a decade ago. While the plant solutions would attack most metals, titanium is an exception and this metal has been used in the centrifuge which receives the pure ferrous chloride crystals after crystallization (see photo IV). The rotating parts of the centrifuge which are in contact with the crystals are made of titanium. High pressure pumps used to propel corrosive liquids to a spray roaster have casings and impellers also made of titanium.

High temperature alloys similar to those used in the rocket motors of space vehicles were used to withstand the cyclic temperature in the



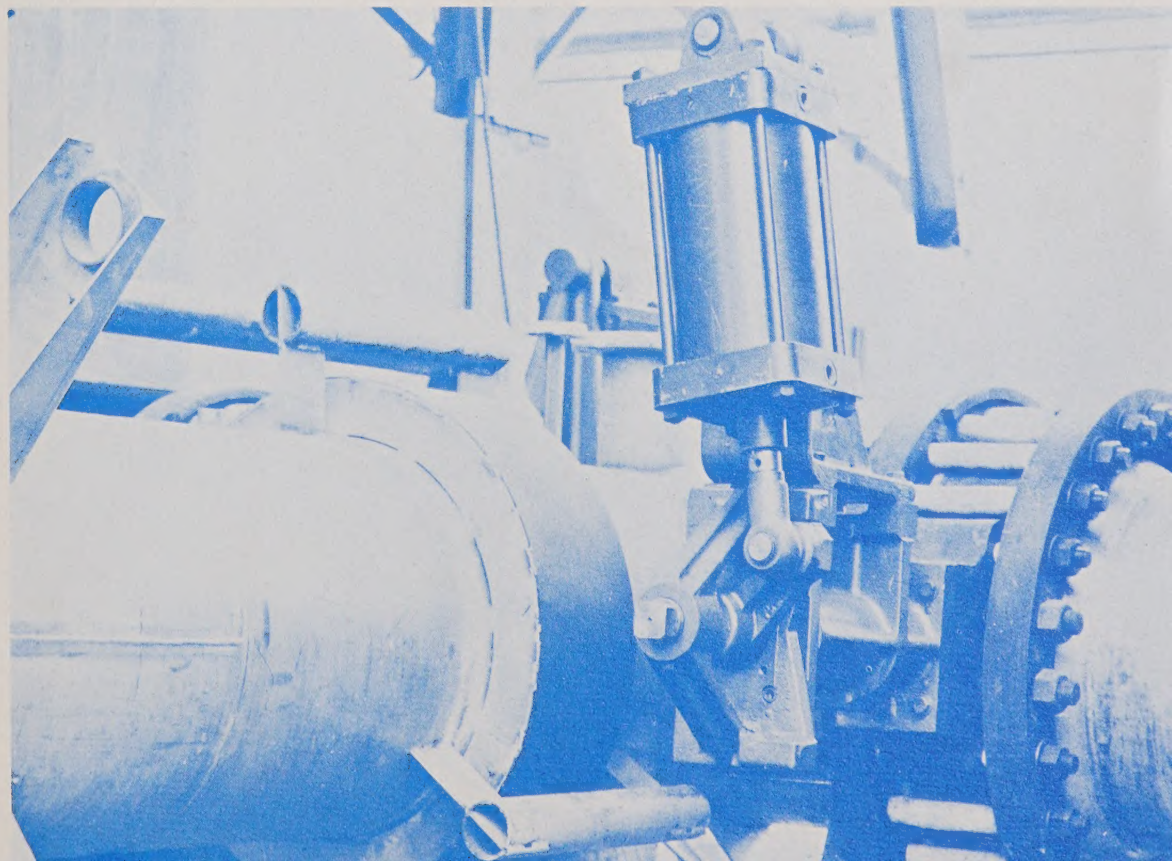


reduction reactors. One piping application involves the use of a nickel base alloy known as Hastelloy X in a hot hydrogen atmosphere (see photo V). This alloy was used since it allowed thinner walls at the temperatures and pressures involved.

The resulting reduction in weight made it easier to support the unit structurally than would have been the case if other more common alloys had been used.

The isolating valves in another unique application were developed from a design previously used in test rigs for jet engines (see photo VI). The materials involved were temperature resistant nickel cast iron and high temperature nickel alloys.

These are but a few examples of the new materials used to allow the Peace River Process to economically and consistently produce iron powder — a noncorrosive product born in a corrosive environment.



**chemically refined
iron powder**

available in these grades:

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